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REMARKS

Reconsideration of the above identified application is respectfully requested.

Para. 42 of the specification has been amended to correct a spelling error.

Claim 5 has been amended to correct an editorial error since the recited air is merely the work product.

Applicants note the substantial breadth of interpretation of Applicants' claims being proffered by the examiner, which correspondingly enlarges claim scope in later infringement analysis of the file wrapper. However, the examiner has failed to afford due weight to specific features and cooperation of features which distinguish over the applied art.

Applicants traverse the rejection of claims 1 & 2 for double patenting over Lee '889 et al and Lee '752 et al.

Firstly, it is noted that the examiner is applying Lee '889, yet this reference is not listed in form PTO-892. This informality should be corrected in the next office action to ensure listing of this reference on the issued patent.

Non-statutory double patenting is addressed in MPEP 804, and includes the Goodman case being applied by the examiner.

However, the examiner has failed to establish even a prima facie case of obviousness as required under the provisions of Section 103 as mandated by the MPEP.

In particular, it is noted that the examiner's comments include "conflicting [claims] not identical" and "anticipates" which are mutually exclusive, and undermine the rejection.

Applying Goodman, the examiner further comments that "... where Applicant has once been granted a patent containing a claim for a specific or narrower invention, Applicant may not obtain a claim for the second patent with a claim for the generic or broader invention...."

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Although Goodman applies to the double patenting rejection of broad or genus claims in the application over the narrow or species claims in the applied patent, based on a continuation application, these facts are not relevant to the Applicants' claims or application, and the examiner has not shown otherwise.

MPEP 804 at page 800-20 cautions the examiner that:

Domination and double patenting should not be confused. They are two separate issues. One patent or application "dominates" a second patent or application when the first patent or application has a broad or generic claim which fully encompasses or reads on an invention defined in a narrower or more specific claim in another patent or application. Domination by itself, i.e., in the absence of statutory or nonstatutory double patenting grounds, cannot support a double patenting rejection.

The examiner's comments misapply the requirements of MPEP 804 and In re Goodman, and fail to afford due weight to the fundamentally different claims in the applied references and Applicants' application, and fail to recognize that those claims are so different from each other that they clearly do not meet the genus-species requirement of Goodman.

More specifically, the examiner appears to copy verbatim at pages 2 and 3 of the office action the many features of Patent claim 3, which includes the many, many features also recited in claims 1 & 2, without recognizing the substantial differences of this combination claim over Applicants' claims 1 & 2.

The examiner merely opines that "Patent claim 3 does not disclose having a platform and the three inlet channels being stacked together;" yet this is not the only difference over Applicants' claims 1 & 2.

Claim 1 recites that the airfoil further includes three internal cooling circuits 32,34,36 separated from each other by imperforate bridges 50 and extending in span therein, and

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each circuit includes a respective inlet channel 40,42,44 commencing in axially adjacent alignment in the dovetail 14 and twisting together through the platform 16 into the airfoil behind the leading edge 24 and in transverse adjacent alignment between the pressure and suction sidewalls 20,22.

The three channels 32,34,36 are separated by imperforate bridges, yet claim 1 of Lee '889 expressly recites both imperforate and perforate bridges which teaches away from the proposed combination, and which has been overlooked by the examiner.

The three channels 32,34,36 commence in axially adjacent alignment in the dovetail and twist together into the airfoil in transverse adjacent alignment between the pressure and suction sidewalls

In contrast, no such configuration is disclosed or suggested in Lee '889 in which the three channels 42,46,48 have axially aligned inlets 56,58,60, and remain axially aligned along the chord direction in figures 1-5.

In this regard, note that claim 1 of Lee '889 additionally recites the convex profile of the second bridge 44 and the complementary concave profile of the supply channel 46, which effects a special configuration of the adjacent channels 46,48,42 having no relevance to the transverse alignment recited in Applicants' claim 1.

Claim 1 of Lee '889 also recites the louver form of the channel 48 having no counterpart in Applicants' claim 1. What weight, if any, has the examiner given to such a louver channel in Lee '889, or to any of the differently recited features thereof?

Note further, that the many features recited in claim 1 of Lee '889 must first be removed from this claim, and then this claim would have to be further modified for the twist and transverse configuration to even attempt to produce a claim covering or "encompassing" the features of Applicants' claim 1.

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Note, yet further, that the entirety of the slot-claim 2 in Lee '889 would also have to be removed from claim 3 before attempting to cover or "encompass" Applicants' claim 1.

Applicants' claim 1 does not recite any "slot" whatsoever, so on what basis could there be double patenting?

Does the examiner contend with any objectivity that a claim expressly reciting the elongate slot of claim 2 in Lee '889 would be infringed (double patenting) by the blade of Applicants' claim 1 which does not recite such a slot?

Claim 3 of Lee '889 recites the three inlets, but in the combination of elements previously recited in claims 1 & 2, including the disparate louver channel nowhere recited in Applicants' claim 1. So, where is the support for double-patenting of any kind?

It would appear quite likely that had claim 3 of Lee '889 been presented in Applicants' present application along with claims 1 & 2 being rejected for double-patenting, any examiner, let alone a reasonable examiner, would have certainly made a restriction requirement in view of the substantially different scope, and different inventions.

Restriction requirements in the USPTO are commonly made with the barest of differences in independent claims, especially in view of the extremely crowded art of gas turbine airfoil cooling, for which the references of record are merely examples.

The examiner's use of double-patenting is clearly without merit in first failing to afford any weight to the fundamentally different features recited in Applicants' claims 1 & 2, and those recited in claim 3 of Lee '889.

The examiner then compounds the error of rejection by attempting to further apply Lee '752 based on the contention that "Patent claim 3 does not disclose having a platform and the three inlet channels stacked together."

An obviousness rejection under Section 103 requires a stringent analysis as presented in MPEP 706.02(j) with legal

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motivation as required in Ch. 2100; neither of which being provided by the examiner.

The examiner merely opines that it would have been obvious "to provide a platform...", which platform is a mere incidental feature, while overlooking the fundamentally different combination being recited.

The examiner further merely opines that it would have been obvious to modify Patent claim 3 with Lee '752 "by stacking the inlet channels in the hump of the airfoil for the purpose of providing improved cooling in the airfoil." But what is "improved cooling," and where is this taught, and where is the legal motivation?

Of what relevance to Patent claim 3 is the disparate structure of Lee '752?

In Lee '889, the inlets 56,58,60 are axially aligned in the dovetail.

In Lee '752, the inlets 40a,b,c are axially aligned in the dovetail.

In Lee '889, the channels 42,46,48 are still axially aligned between the leading and trailing edges 22,24.

And, in Lee '752, the circuits 38 (a,b,c) are still axially aligned between the leading and trailing edges 20,22.

The examiner merely opines "stacking" but has failed to afford any weight to the express recitation in claim 1 in which the three circuits must twist through the platform from the axial alignment in the dovetail to the transverse adjacent alignment in the airfoil. This is well explained in the specification at paras. 31 & 32, for example.

The examiner has identified no twisting in Patent claim 3 of Lee '889, nor in the disclosure of Lee '752 since such twisting is irrelevant and not found in either reference in view of the different inventions being disclosed and claimed therein; which inventions provide no basis for any double patenting whatsoever.

Claim 2 recites the airfoil 12 comprising an aerodynamic

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profile increasing in thickness from the leading edge 24 to a hump 48 of maximum thickness therebehind, and decreasing in thickness therefrom to the trailing edge 26; and the three inlet channels 40,42,44 are stacked together across the hump.

The examiner's comments refer only to "stacking ... in the hump," and conspicuously overlook that that stacking must also include "transverse adjacent alignment between said pressure and suction sidewalls."

Patent claim 3 recites nothing of such twisting, stacking, hump, and transverse adjacent alignment, and Lee '752 clearly lacks any relevant structure or teaching.

Note that figure 3 of Lee '889 illustrates solely the channel 48 across the maximum width region of the airfoil, with channels 46 and 42 being on opposite axial or chordal sides thereof.

And, the various figures of Lee '752 clearly show a single flow channel in the maximum width region, with adjacent channels being on axially opposite sides thereof without, twisting, stacking, hump, or transverse adjacent alignment in any manner, let alone in any manner relevant to Patent claim 3, or Applicants' claims 1 & 2.

On page 4 of the office action, the examiner reproduces claims 1 & 2, and then merely contends that "Patent claim 3 of Lee et al encompasses Application claims 1 and 2."

This statement is clear error, and unsupported by any evidence in either the disclosure of Lee '889 or in Patent claim 3 itself.

Applicants have presented above the many, many features expressly recited in Patent claim 3 which would necessarily have to be removed from that claim 3 to even begin to "encompass" Applicants' claims 1 & 2.

Applicants have also presented above that Patent claim 3 lacks any recitation of the twist from axial to transverse alignment as recited in claim 1; and further lacks any hump, and stacking thereacross with transverse adjacent alignment

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as recited in claim 2.

Clearly, Goodman does not support the rejection of claims 1 & 2 for double patenting; and, to the contrary, supports the non-obviousness of claims 1 & 2 which recite fundamentally different turbine blades than that recited in Patent claim 3.

Clearly, "Application claims 1 and 2 are [NOT] anticipated by Patent claim 3 in view of Lee et al," and the examiner's use of "anticipation" is against the common interpretation thereof as applying to rejections under Section 102, not under Section 103.

Accordingly, withdrawal of the rejection of claims 1 & 2 for double patenting over Lee '889 et al and Lee '752 et al is warranted and is requested.

Applicants traverse the rejection of claims 11 & 12 for double patenting over Lee '889 et al and Lee '752 et al.

It appears that the examiner has merely copied his previous comments for claims 1 & 2, and now applies the same contentions without regard to the different scope of these claims, and with substantially the same errors addressed in detail above, and incorporated herein by reference.

Independent claim 11 is broader in scope than independent claim 1, since it does not include the imperforate bridges feature, later recited in dependent claim 25.

As indicated above, claim 1 recites imperforate bridges, yet Patent claim 3 of Lee '889 being applied by the examiner expressly recites a perforate first bridge in addition to the imperforate second and third bridges.

This perforate bridge, in and of itself, renders without merit any rejection of claims 1 & 2 for double patenting.

Although claims 11 & 12 do not recite the imperforate bridges they still recite the three cooling circuits 32,34,36 having inlets in axially adjacent alignment in the dovetail, and twisting into the airfoil in transverse adjacent

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alignment between the pressure and suction sides.

As indicated above, the circuits 42,46,48 in Lee '889 do not twist from axial to transverse alignment, and remain in axially adjacent alignment along the chord as illustrated in figures 2 and 3. Patent claim 3 clearly does not recite such twisting and different alignment, and the examiner has not shown otherwise.

The circuits 38 in Lee '752 do not twist from axial to transverse alignment, and remain in axially adjacent alignment along the chord as clearly shown in figures 1 and 2. And, the examiner has not shown any relevant teachings in these two disparate references Lee '889 and Lee '752 to combine them in any manner, let alone the manner expressly recited in claims 11 & 12.

And, equally significant are the many, many additional features recited in Patent claim 3, many of which must necessarily first be removed from the claim in order to fabricate a rejection of claims 11 & 12 for double patenting.

Double patenting, of course, requires substantial identity in what is actually recited in the competing claims. The examiner has clearly overlooked the fundamentally different recitations in Patent claim 3 and Applicants' claims 11 & 12, which are clearly not substantially identical, but, to the contrary, are substantially different lacking any common elements from which double patenting might be even argued.

As indicated above, the genus-species facts of Goodman render this case irrelevant to the rejection of claims 11 & 12.

The examiner has failed to afford any weight to express claim features, and overlooks the substantially different combinations being recited in claims 11 & 12 versus Patent claim 3 of Lee '889.

Lastly, the examiner's bald statement that "anticipation is the epitome of obviousness," misapplies these notoriously

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well known principles. "Anticipation" requires stringent identity on a one-to-one basis of each and every feature recited in a single claim in the same combination.

Patent claim 3 of Lee '889, on its face, has many, many more features than those recited in claims 11 & 12, as well as recited in claims 1 & 2, and "anticipation" cannot be made based on the simply different number count of words alone.

And, more importantly, the words recited in Applicants' claims 1 & 2 and 11 & 12 effect a combination having no counterpart in Patent claim 3 of Lee '889, singly, or in any combination with Lee '752.

Significant to all of Applicants' claims is the twisting of the three circuits from axially adjacent alignment in the dovetail to transverse adjacent alignment in the airfoil, neither recited in Patent claim 3, nor disclosed in Lee '889, nor disclosed in Lee '752, and the examiner has proffered no evidence to support any combination of these disparate references, let alone a combination thereof relevant to claims 1 & 2 and 11 & 12.

Accordingly, withdrawal of the rejection of claims 11 & 12 for double patenting over Lee '889 et al and Lee '752 et al is warranted and is requested.

Applicants traverse the rejection of claims 1 and 11 under Section 102(b) over Liotta et al.

The examiner's characterization of Liotta is clearly erroneous since the circuits 40,46,50 do not "[twist] together through said platform into said airfoil behind said leading edge and in transverse adjacent alignment between said pressure and suction sidewalls."

These features of independent claims 1 & 11 are quite significant, and the examiner has failed to afford any weight thereto, and has failed to explain any definition of these terms which would be different to one skilled in the art for supporting the rejection.

Figure 2 of Liotta clearly illustrates the axially

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adjacent alignment of the inlets 42a,b,c which continues radially up the airfoil without change, without twist, and without transverse adjacent alignment under any definition of these terms, and remains the same axially adjacent alignment in the various radial legs of the serpentine circuit 40.

Figure 1 of Liotta shows in phantom the axially adjacent alignment of the serpentine legs.

Figure 3 of Liotta shows the axially adjacent alignment of the serpentine legs in the tip region.

And, Figure 4 of Liotta clearly shows the axially adjacent alignment of the serpentine legs in the radial sectional view between the opposite pressure and suction sidewalls.

The examiner's bald contention of anticipation of claims 1 and 11 is therefore not supported by any identified evidence, nor supported by any special definition of the claim terms as being used by the examiner.

Accordingly, withdrawal of the rejection of claims 1 and 11 under Section 102(b) over Liotta et al is warranted and is requested.

Applicants traverse the rejection of claims 1, 2, 11, and 12 under Section 102(e) over Lee '752 et al.

The examiner's use of Section 102(e) is questioned since the patent being applied, i.e., USP 5,967,752 - Lee et al, has an issue date of "Oct. 19, 1999" well more than one year before Applicants' filing date of 11/20/2003, which permits the use of Section 102(b) in the same manner as that section was used for applying reference Liotta. So, why does the examiner employ Section 102(e), and direct the Applicants to Patent Rules 131 and 132 when they are not relevant?

Nevertheless, the examiner's characterization of Lee '752 is clearly erroneous since the serpentine circuits 38 (a,b,c) do not "[twist] together through said platform into said airfoil behind said leading edge and in transverse adjacent alignment between said pressure and suction

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sidewalls."

Note also that claim 1 recites imperforate bridges, whereas the ribs of Lee '752 necessarily have openings for the slant ribs.

These features of independent claims 1 & 11 are quite significant, and the examiner has failed to afford any weight thereto, and has failed to explain any definition of these terms which would be different to one skilled in the art for supporting the rejection.

Figures 1 and 4 of Lee '752 clearly illustrate the axially adjacent alignment of the inlets 40a,b,c which continues radially up the airfoil without change, without twist, and without transverse adjacent alignment under any definition of these terms, and remains the same axially adjacent alignment in the various radial legs of the serpentine circuit 38.

Figures 2 and 5 of Lee '752 show in radial sectional view the axially adjacent alignment of the serpentine legs, separated from each other by the transverse ribs 34a.

Figure 3 of Lee '752 clearly shows the radial span of the serpentine legs which extend fully between the opposite pressure and suction sidewalls, without twist, and clearly without any transverse adjacent alignment.

And, Figure 6 of Lee '752 clearly shows in isometric view the axially adjacent alignment of the serpentine legs which bridge the opposite pressure and suction sidewalls, clearly without any transverse adjacent alignment.

The examiner's bald contention of anticipation of claims 1 and 11 is therefore not supported by any identified evidence, nor supported by any special definition of the claim terms as being used by the examiner.

Claims 2 & 12 recite the hump and three inlet channels stacked together across the hump in transverse adjacent alignment overlooked by the examiner's mere contentions.

Figure 1 of Lee '752 shows the three inlet channels

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40a,b,c in solely axially adjacent alignment both at the bottom of the dovetail and at the root end of the airfoil.

Figure 2 of Lee '752 further shows the axially adjacent alignment of the channels between the leading and trailing edges; and shows the maximum width of the airfoil in which a single channel is found extending transversely thereacross, with adjacent channels being disposed on axially or chordally opposite sides thereof, and not in the maximum width region.

Where then is the examiner's evidence to support the rejection of claims 1, 2, 11, and 12?

What definition of the claim terms does the examiner attempt to apply, and where is the evidentiary or dictionary support therefor?

These claims utilize plain terms, having plain meanings consistent with their use in the specification, and the examiner has failed to provide any special definition of the claim terms which would be understood by one skilled in the art.

The examiner may interpret claims broadly, but the MPEP clearly mandates the interpretation of terms for plain meaning and as would be understood by one skilled in the art when read in light of the specification.

Applicants' claims recite cooling circuits which twist from axially adjacent alignment in the dovetail to transverse adjacent alignment in the airfoil, and quite clearly this combination of features is neither disclosed nor rendered obvious by Lee '752; nor has the examiner explained any plausible interpretation of the claims which could even remotely be anticipated by Lee '752.

Accordingly, withdrawal of the rejection of claims 1, 2, 11, and 12 under Section 102(e), or Section 102(b), over Lee '752 et al is warranted and is requested.

Applicants note the allowability of claims 3-10 and 13-25, but the rewriting thereof is not warranted in view of the substantial differences of these claims themselves, as well

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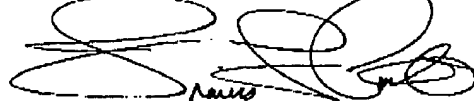
as their parent claims, over the references of record.

In accordance with the duty imposed by 37 CFR 1.104 and MPEP sections 707, 707.05, 707.07, and 707.07(g), the examiner is requested to reconsider all the art of record, including the additional references not applied, to ensure full compliance with the required thoroughness of examination.

In re Portola Packaging, Inc., 42 USPQ2d 1295 (Fed. Cir. 1997) emphasizes the importance of complying with this duty to ensure that all references of record have been fully considered by the examiner in the various combinations thereof. And, the Board of Appeals has further elaborated on the importance of this examiner duty in Ex parte Schricker, 56 USPQ2d 1723 (B.P.A.I. 2000).

In view of the above remarks, allowance of all claims 1-25 over the art of record is warranted and is requested.

Respectfully submitted,



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